



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS

Appellant: Yasuhiro UEKI )  
Serial No: 10/714,864 ) Art Unit: 2627  
Filed: November 18, 2003 ) Examiner: Haley, Joseph R.  
For: INFORMATION-SIGNAL ) Attorney Docket: 0124/0019  
RECORDING AND REPRODUCING )  
APPARATUS, RELATED METHOD )  
AND RELATED COMPUTER )  
PROGRAM )

**FEE AUTHORIZATION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Attached herewith is an Appeal Brief relating to the above-identified application. The Commissioner is hereby authorized to charge the Appeal Brief fee of \$500.00 using the attached form PTO-2038.

The Commissioner is further hereby authorized to debit funds from Deposit Account No. 50-0501 if the amount noted above is insufficient. A duplicate copy of this letter is attached.

Respectfully submitted,

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Date: Sept 28, 2007



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**APPEAL BRIEF**

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### **REAL PARTY IN INTEREST**

The real party in interest of the subject application is Victor Company of Japan, Ltd. to whom the inventor assigned his invention per an Assignment recorded on November 18, 2003 at Reel 014740, Frame 0327 of the Assignment Branch at the U.S. Patent and Trademark Office.

## **RELATED APPEALS AND INTERFERENCES**

As far as is known, there are no appeals or interferences that are related to, directly affected or be directly affected by or have a bearing on the Board's decision in the pending appeal.

## **STATUS OF CLAIMS**

Pending claims 1-3 were finally rejected and are being appealed herein.  
Being appealed claims 1-3 are reproduced in the Claims Appendix.

### **STATUS OF AMENDMENTS**

There was no amendment filed subsequent to the Office Action dated May 31, 2007 final rejecting the pending claims.

## **SUMMARY OF THE CLAIMED SUBJECT MATTER**

### **Claim 1**

Claim 1 relates to a method of reproducing information from a recording medium (13) having first and second places (13a, 13b) on which first and second information signals ("A", "B") are recorded respectively [Figs. 2, 3; page 11, line 11 to page 12, line 7]<sup>1</sup>. The recording medium includes at least first and second signal recording layers (20, 21) accessible from one side [Figs. 2, 3; page 11, line 11 to page 12, line 7]. The method comprises the steps of: rotating the recording medium [page 12, line 13-16; page 13, lines 11-12]; enabling a head (14) to reproduce the first and second information signals ("A", "B") from the first and second places (13a, 13b) in the recording medium (13) on a time sharing basis to get first and second reproduced signals respectively [Figs. 5-7; page 31, lines 2-6; page 32, line 20 to page 34, line 24]; temporarily storing the first and second reproduced signal in a buffer memory (19) [page 31, lines 6-14; page 32, line 20 to page 34, line 24]; outputting the first and second reproduced signals from the buffer memory (19) at first and second transfer rates ( $R_a$ ,  $R_b$ ) respectively [page 31, line 15 to page 32, line 6; page 36, line 25 to page 38, line 17]; transmitting the first and second reproduced signals from the head (14, 113 for the embodiment shown in Figs. 19-30) to the buffer memory (19, 119) on a time sharing basis [page 31, lines 1-6] and at a third transfer rate ( $R_p$ ) higher than the first and second transfer rates ( $R_a$ ,  $R_b$ ) [page 37, line 5 to page 38, line 17; page 40, lines 19-27 relating to the Fig. 9 embodiment; page 106, lines 13-25 and page 111, lines 3-11 relating to the Fig. 19 embodiment].

The reproducing method of claim 1 moreover includes the step of deciding at least one of (1) an information amount of the first reproduced signal being continuously transmitted from the head (14, 114) to the buffer memory (19, 119) [page 111, lines 17-21] and (2) an information amount of the second reproduced

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<sup>1</sup> Parenthesized numbers represent the numbers in the disclosure referencing the elements being discussed. The pages and line numbers, and figures if any, describing the subject matters being discussed are in brackets.



signal continuously transmitted from the head to the buffer memory [page 111, lines 21-25] on the basis on a given relation among parameters [page 40, line 19 to page 41, line 26 for the Fig. 9 embodiment; page 102, line 21 to page 115, line 3 and page 112, line 3 to page 113, line 20 for the Fig. 19 embodiment] that include

(a) a time interval taken by the head to move from the first place to the second place (13a, 13b; 113 (1), 113 (2)) as viewed on one of the first and second signal recording layers (L0, L1 in Figs. 2 and 3 embodiment; L0, L1, L2 in the Figs. 20 and 21 embodiment),

(b) a time interval taken by the head to move from the second place to the first place, as viewed on one of the first and second signal recording layers (L0, L1; L0, L1, L2),

(c) a time interval taken by the head to move its focus from the first signal recording layer to the second signal recording layer [page 39, lines 36 to page 40, line 7 for the Fig. 11 embodiment; page 102, line 24 to page 105, line 8 and page 112, line 3 to page 113, line 20 for the embodiment shown in Figs. 27 and 28];

(d) a time interval taken by the head to move its focus from the second signal recording layer to the first signal recording layer [page 39, lines 36 to page 40, line 7 for the Fig. 11 embodiment; page 102, line 24 to page 105, line 8 and page 112, line 3 to page 113, line 20 for the embodiment shown in Figs. 27 and 28];

(e) the first transfer rate ( $R_a$ ),

(f) the second transfer rate ( $R_b$ ), and (g) the first transfer rate ( $R_p$ ) [page 40, line 19 to page 43, line 7 for the first embodiment; page 111, line 3 to page 113, line 3 for the Fig. 19 embodiment].

The reproducing method as set forth in claim 1 for reproducing first and second information signals from different places of a recoding medium that has different recording layers therefore requires that the amount of information of the first and second reproduced signals to depend on a number of parameters that are set forth in (a) to (f). Among these parameters are (c) the timed interval that takes the head that reads the signal to move its focus from the first signal recording layer (any

of L1, L2, etc.) to the second signal recording layer (L0, L1, etc.), and (d) the time interval taken from the head to move its focus from the second signal recording layer (L2 for example) to the first signal recording layer (L0 for example). In other words, the claim 1 invention requires that there be a “focus jump” between the layers. This focus jump aspect of the instant invention is illustrated in Fig. 11 for the embodiment of Fig. 5. There, the focus of the head changes from layer L0 to L1 via focus jump S38a, and after some traveling on the L1 layer, another focus jump S45a changes the focus of the head from layer L1 back to layer L0. For the embodiment of Fig. 19, the “focus jump” required for a three layer recoding medium is illustrated for example in Figs. 27 and 28 where there are focus jumps F1, F2 and Fn for the exemplar Fig. 27 illustration and focus jumps F1 and Fn for the exemplar Fig. 28 illustration.

Thus, for the inventive method of claim 1, the information amount of each of the first and second reproduced signals is based upon, among other parameters, the time that the head would have to move its focus between layers of a multi-layer recording medium and the time it takes the head to move along each of the layers to reproduce information from a multi-layer large capacity optical-disc.

## Claim 2

Claim 2 relates to a method of recording information on a recording medium (13) [Figs. 12-14] that includes at least first and second signal recording layers (L0, L1) accessible from one side that comprises the steps of:<sup>2</sup> rotating the recoding medium [page 20, lines 21-22]; storing first and second information signals (“A”, “B”) into a buffer memory (19) at first and second transfer rates (Ra, Rb) respectively [page 61, lines 26-28]; reading out first and second information signals (“A”, “B”) from the buffer memory (19) on a time sharing basis to get first and second read out signals respectively [page 62, lines 15-20]; enabling a head to record the first and second read out signals on first and second places (13a, 13b) in the recording

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<sup>2</sup> For discussion of claims 2 and 3, instead of referring to the different embodiments, to keep the discussion less complicated, focus is directed to the first embodiment that describes those methods. However, it should be noted that the illustrations of Figs. 27 and 28 are equally applicable to the methods of claims 2 and 3, as each of those methods requires “focus jumps” among the layers of a multiple layer optical-disc.

medium (13) respectively on a time sharing basis and at a third transfer rate ( $R_p$ ) higher than the first and second transfer rates ( $R_a$ ,  $R_b$ ) [Fig. 14; page 62, lines 28-23].

The recording method claim 2 further includes the step of deciding the information amount of at least one of the first and second readout signals that are continuously transmitted from the buffer memory (19) to the head (14) based on a given relation among parameters [page 69, lines 12-28] that include

the time intervals for moving the head (14) from a first place (13a) to a second place (13b) on one of the first and second recording layers ( $L_1$ ,  $L_2$ ) and *vice versa*, that is the time intervals for moving the head (14) from the second place (13b) to the first place (13a) on the recording layer [page 64, lines 16-28],

the time interval taken by the head (14) to move its focus from the first signal recording layer (either  $L_0$ ,  $L_1$ ) to the second signal recording layer ( $L_0$ ,  $L_1$ ) and *vice versa*, that is the time interval for the head to move its focus from the second signal recording layer (either  $L_0$  or  $L_1$ ) to the first signal recording layer ( $L_0$ ,  $L_1$ ) [page 66, lines 7-23].

The other parameters that also form the basis for the given relation in the deciding step include the first transfer rate ( $R_a$ ) the second transfer rate ( $R_b$ ) and the third transfer rate ( $R_p$ ).

The information amount of the first and second readout signals for the recording information of method claim 2 therefore is dependent on a number of parameters which include the time interval it takes for the head to focus from one layer to another layer of a multi-layer optical-disc.

### Claim 3

Claim 3 relates to a method of recording and reproducing information on and from a recording medium (13) having a first place (13a, 13b) on which a first information signal is recorded. The recording medium includes at least first and

second signal recording layers (L0, L1 or L0, L1, L2) that are accessible from one side of the recording medium [Figs. 15-17]. The method comprises the steps of: rotating the recording medium [page 12, lines 10-13; page 13, lines 11-16]; enabling a head (14) to reproduce the first information signal ("A") from the first place (13a) in the recording medium (13) to get a reproduced signal [page 70, lines 6-8; page 73, lines 4-6]; temporarily storing the reproduced signal in a buffer memory (19) [page 70, lines 8-13; page 73, lines 5-7 and lines 16-20]; outputting the reproduced signal ("A") from the buffer memory (19) at a first transfer rate ( $R_a$ ) [page 70, lines 10-13; page 73, lines 21-23]; storing a second information signal (B) into the buffer memory (19) at a second transfer rate ( $R_b$ ) [page 70, lines 13-15]; transmitting the reproduced signal from the head (14) to the buffer memory (19) at a third transfer rate ( $R_p$ ) higher than the first and second transfer rates ( $R_a$ ,  $R_b$ ) [page 70, lines 8-10]; reading out the second information signal ("B") from the buffer memory (19) to get a readout signal [page 70, lines 16-18; page 76, lines 14-16]; and enabling the head (14) to record the readout signal ("B") on a second place (13b) in the recording medium (13) which differs from the first place (13a) at the third transfer rate ( $R_p$ ) and on time sharing basis with respect to the reproduction of the first information signal ("A") from the first place (13a) [page 70, lines 18-24; page 75, lines 12-19].

The recording and reproducing method of claim 3 further includes the step of deciding one of (1) the information amount of the reproduced signal continuously being transmitted from the head to the buffer memory and (2) the information amount of the read out signal that is continuously being transmitted from the buffer memory to the head on the basis of a given relationship among parameters (Figs. 16 and 17; page 77, line 19 to page 79, line 10). These parameters include

- a time interval taken by the head to move from the first place (13a) to a second place (13b) on one of the first and second signal recording layers (L0, L1),

- a time interval taken by the head to move from the second place (13b) to the first place (13a) on one of the first and second signal recording layers (L0, L1) [page 74, lines 15-22 relating to the intra-layer recording; page 76, lines 6-13 relating to the intra-layer reproducing]

a time interval taken by the head to move its focus from the first signal recording layer (L0, L1, L2) to the second signal recording layer (L0, L1, L2),

a time interval taken by the head to move its focus from the second signal recording layer (any one of L0, L1) to the first signal recording layer (the other of L0, L1) [page 74, lines 22 to page 75, line 3 relating to the focus jump for recording; page 76, lines 13-22 relating to the reproduce focus jump; Fig. 17],

the first transfer rate (Ra),

the second transfer rate (Rb), and

the third transfer rate (Rp) [page 79, lines 11-23].

The recording and reproducing method of claim 3 therefor requires that the information amount of the reproduced signal and the readout signal be based on a given relation that includes a number of parameters. One of these parameters is the time interval it takes for movement of the head from the first place to a second place, and *vice versa*, along the same layer (intra-layer time) of one layer of a multiple layer disc. Another of these parameters is the time it takes for the head of the recording and reproducing device to change its focus from one layer to another layer (inter-layer time) between different layers of the multi-layer disc.

**GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1-3 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki (US 6,285,632) in view of Florczak et al. (US 5,640,382).

## **ARGUMENT**

The issue here is whether the claimed invention is obvious over the combined teachings of Ueki (US 6,285,632) and Florczak et al. (US 5,640,382).

As discussed above in the Summary of the Claimed Subject Matter section, claim 1 is directed to a method of reproducing information from a recording medium that has first and second signal recording layers in which the amount of information of the first and second reproduced signals continuously transmitted from the reproducing head to the buffer memory of a reproducing device is based on a given relation which in turn is based on a number of parameters. One set of these parameters relates to the time interval it would take for the reproducing head to move from a first place to a second place, or from the second place to the first place, in any one of the recording layers of the recording medium. This set of parameters may be referred to as the "inter-layer time interval". Another set of the parameters relates to the respective time intervals that it would take the reproducing head to move its focus from the first signal recording layer to the second signal recording layer, or from the second recording layer to the first recording layer, of the recording medium. This set of parameters may be referred to as the "intra-layer time interval". These parameters are the so-called "focus jumps" that are required for the method of the instant invention to assess the amount of information that would be retrieved from the reproducing signals that are being reproduced from the multi-layered recording medium. Other parameters that are considered are the transfer rates of the signals and a constant transfer rate between the buffer memory and the optical pick-up head. Thus, method claim 1 requires a determination of both the intra-layer time interval as well as the inter-layer time interval, in addition to the transfer rates, for determining the amount of information being reproduced from the recording medium by the first and second signals in the two signal playback mode.

For the convenience of the Board, Figs. 10 and 11 and Figs. 27 and 28 have been attached to the Drawings Appendix. These figures show the change of focus for the pickup head from one layer to the next. In Fig. 11, S38a illustrates the focus

of the pickup head jumping from layer L0 to layer L1 and S45a illustrates the focus of the pickup head jumping from layer L1 to layer L0, for reproducing the data from those different layers of the recording medium. The intra-layer jumps as well as the inter-layer jumps (focus jumps) are even more clearly shown in the also attached Figs. 27 and 28. In Fig. 27 it can be seen that there are focus jumps F1 (from layer L0 to layer L2), F2 (from layer L2 to layer L1) and Fn (from layer L1 to layer L0). In Fig. 28, the focus jumps are shown as F1 (from layer L0 to layer L2) and Fn (from layer L2 back to layer L0). These focus jumps between the layers of the multi-layer recording medium allow the pickup head to retrieve the information from those layers of the multi-layer disc. The time intervals of those focus jumps are parameters that are determinative in the deciding step of method claim 1.

Ueki (US 6,285,632) discloses an earlier invention of Appellant. There Ueki discloses a one layer recording medium, and the reproducing of information from the single layer optical disc based on a number of parameters. But Ueki does not disclose or suggest any parameter that deals with any time interval taken by the pick-up head to move its focus from a first signal recording layer to a second signal recording layer, or from the second recording layer to the first recording layer, of a multi-layer recording medium, as required in sub-steps (c) and (d) of the deciding step of claim 1.

Florczak (US 5,640,382) was cited by the examiner for the showing of a two layer pre-recorded optical disc. But that is all that Florczak teaches, i.e., that data may be reproduced from the different layers of the optical disc. Thus, Florczak likewise fails to disclose or suggest the parameters c and d in the given relation required in the deciding step of method 1. In other words, Florczak fails to disclose or suggest any time interval taken by the head to move its focus from a first signal recording layer to a second signal recording layer and the time interval taken by the head to move its focus from the second signal recording layer to the first signal recording layer. Indeed, Florczak mostly discloses the making of a multiple layer optical disc and does not relate to determining the amount of information being transmitted between a pickup head and a buffer memory.



In *Alza Corp. v. Mylan Labs., Inc.*<sup>3</sup>, 464 F. 3d 1286, 1291 (Fed. Cir. 2006), the court states:

The motivation-suggestion-teaching test picks up where the analogous art test leaves off and informs the Graham analysis. To reach a non-hindsight driven conclusion as to whether a person having ordinary skill in the art at the time of the invention would have viewed the subject matter as a whole to have been obvious in view of multiple references, the Board must provide some rationale, articulation, or reasoned basis to explain why the conclusion of obviousness is correct. ... A suggestion, teaching, or motivation to combine the relevant prior art teachings does not have to be found explicitly in the prior art, as "the teaching, motivation, or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references.... The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." However, rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. This requirement is as much rooted in the Administrative Procedure Act [for our review of Board determinations], which ensures due process and non-arbitrary decision making, as it is in § 103. At page 1291.

Neither Ueki nor Florczak discloses, or suggests, the taking into account of the time intervals required by the pickup head to focus jump among the layers of a multi-layer disc in order to determine the amount of information that could be continuously transmitted from the head to a buffer memory. Thus, the combination of the

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<sup>3</sup> The *Alza* case was cited by the Supreme Court in *KSR Int'l Co. v. Teleflex Inc.* No.04-1350 (decided 4/3/2007) at page 18 of slip opinion.

teachings of Ueki and Florczak could not possibly teach, or render as obvious to one skilled in the art, sub-steps (c) and (d) of the deciding step of claim 1, since such steps are totally absent and not taught or suggested in either reference.

Nor has the examiner provided some articulated reasoning with rational underpinning to support his conclusion of obviousness. Indeed, It appears that the examiner's rejection is based on the premise that sub-steps (c) and (d) are not required so long as the other limitations are met (paragraph bridging pages 3 and 4 of Office Action dated May 31, 2007).

Appellant respectfully submits that this position taken by the examiner is not sustainable insofar as each of claims 1-3 requires that its deciding step be based on a given relation that comprises a number of parameters, for example a to g in claim 1. Thus, each one of those parameters is a requisite part of the given relation required for each of claims 1 (and also for claims 2 and 3 discussed *infra*). Therefore, to totally ignore two of those required parameters just because other required parameters may allegedly be met runs afoul of making out a *prima facie* case of obviousness rejection.<sup>4</sup>

In view of the above, Appellant respectfully submits that claim 1 is non-obvious over the combination of Ueki and Florczak.

Claim 2 is directed to a method of recording information on a multi-layer recording medium. Thus, instead of reproducing the signals from the recording medium, step 2 relates to the recording of first and second signals onto different places of the recording medium. In the deciding step of method claim 2, it is the information amount of the first and second readout signals to be transmitted from the buffer memory to the readout head of the device that has a relationship based on a number of parameters including the respective time intervals for the head to

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<sup>4</sup> The same argument also supports Appellant's position that the examiner has failed to make out a *prima facie* case for an obviousness rejection against claims 2 and 3.

focus from a first signal recording layer to a second signal recording layer, and *vice versa*, that is from the second signal recording layer to the first signal recording layer, of a multi-layer disc.

As discussed above with respect to claim 1, such time intervals for the head of a recording device to move its focus from one layer to the next in a multi-layer medium is not disclosed, or suggested, in either Ueki or Florczak. Nor is it believed that the premise under which the examiner based his rejection is meritorious. Moreover, Florczak discloses a prerecorded optical-disc, and therefore would be inapplicable to the recording method of claim 2. Accordingly, Appellant respectfully submits that the rejection of claim 2 is likewise without merit based on the combination of Ueki and Florczak.

Claim 3 relates to a method of both recording and reproducing information on and from a multi-layered recording medium that is accessible from one side. For the method of claim 3, information signal is both produced from the recording medium and recorded on the recording medium. The information amount of the reproduced signal continuously being transmitted from the head to the buffer memory and the information amount of the readout signal that is continuously being transmitted from the buffer memory to the head are determined on the basis of a given relation based on a number of parameters. The same as was noted above with respect to claims 1 and 2, two of the parameters are the time interval taken by the head to move its focus from the first signal recording layer to the second signal recording layer and the time interval taken by the head to move its focus from the second signal recording layer to the first signal recording layer. As further discussed above, neither Ueki nor Florczak discloses or suggests any time intervals that are related to "focus jumps" by the pickup/recording head of a reproducing/recording device. Accordingly, Appellant respectfully submits that the rejection of claim 3 under Ueki and Florczak is likewise without merit.

In conclusion, for the reasons pointed out above, it is respectfully submitted that each of pending claims 1-3 being appealed in the present invention is patentably

distinguishable over the cited references and that the examiner's rejection is not sustainable. Accordingly, the Board is respectfully requested to reverse the examiner's rejection.

Respectfully submitted,



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## **CLAIMS APPENDIX**

1. A method of reproducing information from a recording medium having first and second places on which first and second information signals are recorded respectively, the recording medium including at least first and second signal recording layers accessible from one side, the method comprising the steps of:

rotating the recording medium;

enabling a head to reproduce the first and second information signals from the first and second places in the recording medium on a time sharing basis to get first and second reproduced signals respectively;

temporarily storing the first and second reproduced signals in a buffer memory;

outputting the first and second reproduced signals from the buffer memory at first and second transfer rates respectively;

transmitting the first and second reproduced signals from the head to the buffer memory on a time sharing basis and at a third transfer rate higher than the first and second transfer rates; and

deciding at least one of (1) an information amount of the first reproduced signal continuously transmitted from the head to the buffer memory and (2) an information amount of the second reproduced signal continuously transmitted from the head to the buffer memory on the basis of a given relation among parameters including (a) a time interval taken by the head to move from the first place to the second place as viewed on one of the first and second signal recording layers, (b) a time interval taken by the head to move from the second place to the first place as viewed on one of the first and second signal recording layers, (c) a time interval taken by the head to move its focus from the first signal recording layer to the second signal recording layer, (d) a time interval taken by the head to move its focus from the second signal recording layer to the first signal recording layer, (e) the first transfer rate, (f) the second transfer rate, and (g) the third transfer rate.

2. A method of recording information on a recording medium including at least first and second signal recording layers accessible from one side, the method comprising the steps of:

rotating the recording medium;

storing first and second information signals into a buffer memory at first and second transfer rates respectively;

reading out the first and second information signals from the buffer memory on a time sharing basis to get first and second read-out signals respectively;

enabling a head to record the first and second read-out signals on first and second places in the recording medium respectively on a time sharing basis and at a third transfer rate higher than the first and second transfer rates; and

deciding at least one of (1) an information amount of the first read-out signal continuously transmitted from the buffer memory to the head and (2) an information amount of the second read-out signal continuously transmitted from the buffer memory to the head on the basis of a given relation among parameters including (a) a time interval taken by the head to move from the first place to the second place as viewed on one of the first and second signal recording layers, (b) a time interval taken by the head to move from the second place to the first place as viewed on one of the first and second signal recording layers, (c) a time interval taken by the head to move its focus from the first signal recording layer to the second signal recording layer, (d) a time interval taken by the head to move its focus from the second signal recording layer to the first signal recording layer, (e) the first transfer rate, (f) the second transfer rate, and (g) the third transfer rate.

3. A method of recording and reproducing information on and from a recording medium having a first place on which a first information signal is recorded, the recording medium including at least first and second signal recording layers accessible from one side, the method comprising the steps of:

rotating the recording medium;

enabling a head to reproduce the first information signal from the first place in the recording medium to get a reproduced signal;

temporarily storing the reproduced signal in a buffer memory;

outputting the reproduced signal from the buffer memory at a first transfer rate;

storing a second information signal into the buffer memory at a second transfer rate;

transmitting the reproduced signal from the head to the buffer memory at a third transfer rate higher than the first and second transfer rates;

reading out the second information signal from the buffer memory to get a read-out signal;

enabling the head to record the read-out signal on a second place in the recording medium which differs from the first place at the third transfer rate and on a time sharing basis with respect to the reproduction of the first information signal from the first place; and

deciding at least one of (1) an information amount of the reproduced signal continuously transmitted from the head to the buffer memory and (2) an information amount of the read-out signal continuously transmitted from the buffer memory to the

head on the basis of a given relation among parameters including (a) a time interval taken by the head to move from the first place to the second place as viewed on one of the first and second signal recording layers, (b) a time interval taken by the head to move from the second place to the first place as viewed on one of the first and second signal recording layers, (c) a time interval taken by the head to move its focus from the first signal recording layer to the second signal recording layer, (d) a time interval taken by the head to move its focus from the second signal recording layer to the first signal recording layer, (e) the first transfer rate, (f) the second transfer rate, and (g) the third transfer rate.

## **EVIDENCE APPENDIX**

None.



## **RELATED PROCEEDINGS APPENDIX**

None.



FIG. 10

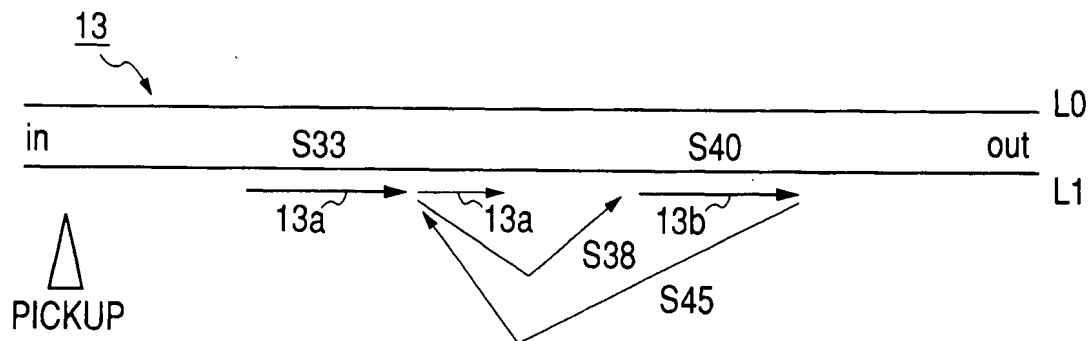
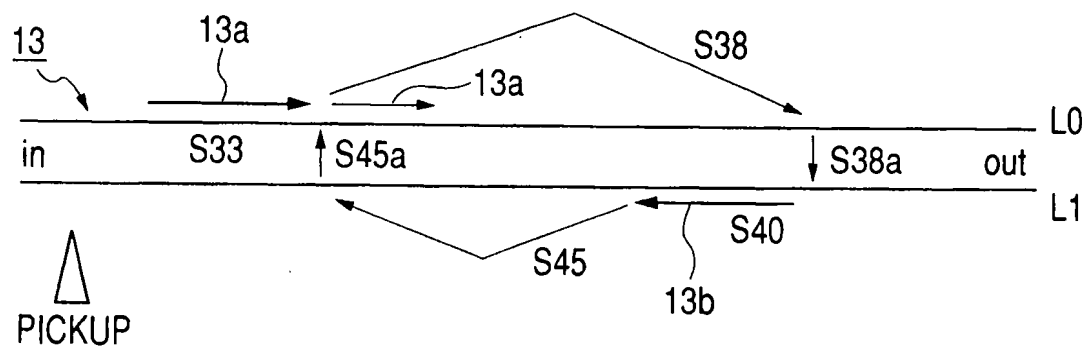
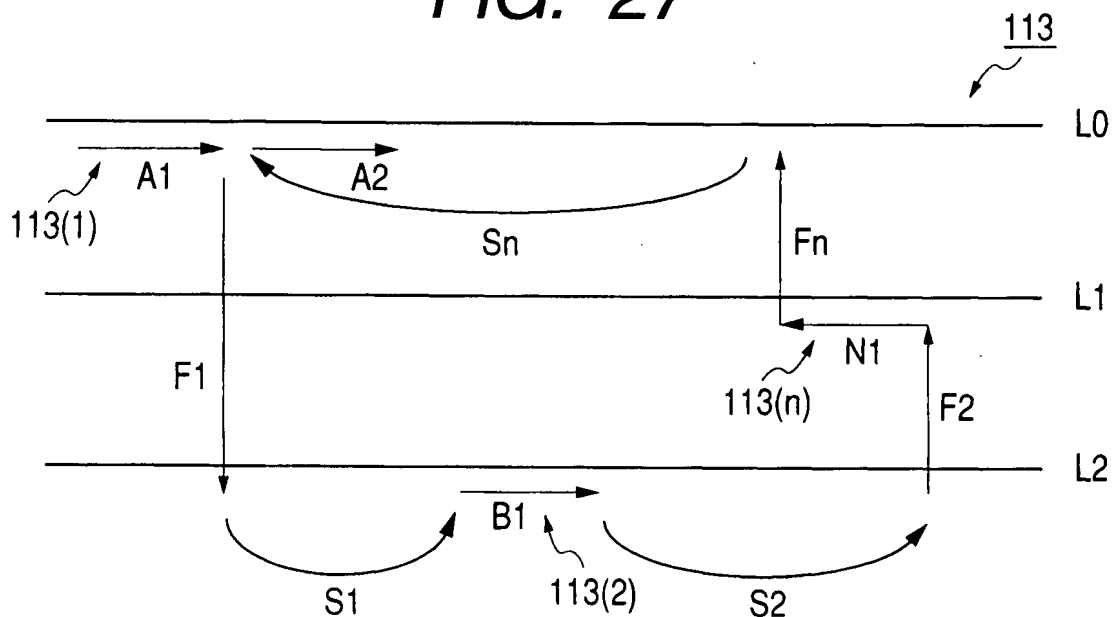


FIG. 11



**FIG. 27****FIG. 28**